4. GEOTECHNICAL REPORT - NIGHTCAP VILLAGE MEBBIN

Australian Soil and Concrete Testing P/L - 2006

AUSTRALIAN SOIL AND CONCRETE TESTING P/L
A.S.C.T.

PO Box 5120
Ballina Mall Centre, Ballina NSW 2478
Unit 7/17 Southern Cross Drive

Telephone: (02) 6686 8567
Fax: (02) 6686 8396
Mobile 0408 079 826

ABN 49 050 539 930

9th May 2006
Ref No : 079- 069

Nightcap Village Development
c/- Hardings Earthmoving
Mitchell Street
UKI NSW 2484

GEOTECHNICAL REPORT
For : Proposed Building Areas 1, 2 & 3
AT : Nightcap Village Mebbin

Dear Sir,

Australian Soil & Concrete Testing Pty Ltd at your request has undertaken a Site Inspection and Investigation at Nightcap Village, Mebbin in the proposed building areas. From the results of Dynamic Cone Penetrometers and Augered Boreholes across the subgrade in the three proposed building areas, the sites have been classified as follows :

Area 1 - Class M : Moderate Reactive
Area 2 - Class H : Highly Reactive
Area 3 - Class S : Slight Reactive in accordance with the guidelines of AS 2870.

The Dynamic Cone Penetrometer tests in the subgrade at the three sites indicate the bearing capacity to be : **100 kPa from 300mm below the surface in the three areas**

The Potential Hazard Classification of the site is :
Class C : Minor Hazard in accordance with Appendix E, Table 1 of AS 1726.

From initial investigations, site observations and onsite testing the three sites vary in terrain and slope. Area 1 is on top of a ridge line facing south, with the proposed building area cleared and grassed. The embankment slope along the ridge is approximately 35% and is heavily grassed with scattered trees and undergrowth. The ridge is considered stable and the building sites are a satisfactory distance from the steep slope of the embankment.

Area 2 is a moderately sloped 20 to 25% hill facing southeast, with the proposed building area across the slope from the middle to the toe of the hill. The site is grassed with scattered trees and there were no signs of slope instability.

Area 3 is a cleared slightly sloped area at the end of a ridge. The site is sloped 2 to 3 % southeast, grassed with scattered trees along the edge of the embankment slope and the sides of the ridge. The proposed building area is sufficiently wide to accommodate the building envelopes with the slope 20% on both sides of the ridge outside the building area.

There were no signs of slip or settlement at the three sites investigated and the proposed areas have been assessed as stable and will not be affected by landslide or subsidence when the proposed village is constructed. The results of all testing performed are attached for your information and should you require any further assistance, please do not hesitate to call myself.

Yours Faithfully,
Australian Soil & Concrete Testing P/L

Brian Dick
Managing Director

AUSTRALIAN SOIL AND CONCRETE TESTING P/L A.B.N. 49 050 539 930
7/17 Southern Cross Drive Ballina NSW 2478 PH: 02-66868567 FAX : 02-66868396

ASCT Doc. No. R11 Rev. 02 - 29/2/00 -BD

Report on Soil Penetration Resistance

Client: Hardings	Project no : 079 - 069	Location: Nightcap Village Mebbin
Test methods: AS 1289 6.3.2	Report no : 079 – 069 - 001	Date Tested : 4/5/06
Lab No : 5980	Layer : Subgrade	Test location: Proposed Building areas 1,2 & 3

Test 1

Depth below surface at commencement of test : 0mm

Graduation Interval mm	Cumulative depth m	No. of Blows Required	Soil Description	Moisture Condition
300	0.30	11	Gravelly Silty Clay : brown yellow	Moist
300	0.60	14	"	"
300	0.90	14	Gravelly Silty Clay : brown grey	"
300	1.20	17	Gravelly Silty Clay : brown grey / Silty Clay/Clay : grey orange brown	"
300	1.50	20	Silty Clay / Clay : grey orange brown	"
300	1.80	30	Clay : grey	"
300	2.10			

Test 2

Depth below surface at commencement of test : 0mm

Graduation Interval Mm	Cumulative depth m	No. of Blows Required	Soil Description	Moisture Condition
300	0.30	8	Silty Clay : red brown grey	Moist
300	0.60	9	"	"
300	0.90	10	"	"
300	1.20	13	"	"
300	1.50	16	Silty Clay / Clay : grey orange brown	"
300	1.80	24	Clay : grey	"
300	2.10			

Test 3

Depth below surface at commencement of test : 0mm

Graduation Interval Mm	Cumulative depth m	No. of Blows Required	Soil Description	Moisture Condition
300	0.30	7	Clayey Silt : grey brown	Moist
300	0.60	8	Sandy Clay : orange grey brown	"
300	0.90	18/200	Sandy Clay : orange grey brown / Sandy Clayey Gravel : yellow orange brown	Dry
300	1.20			
300	1.50			
300	1.80			
300	2.10			

Test

Depth below surface at commencement of test : 0mm

Graduation Interval mm	Cumulative depth m	No. of Blows Required	Soil Description	Moisture Condition
300	0.30			
300	0.60			
300	0.90			
300	1.20			
300	1.50			
300	1.80			
300	2.10			

NATA ACCREDITED FOR TECHNICAL COMPETENCE

This Laboratory is Accredited by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its scope of accreditation. This document shall not be reproduced except in full.

Signed : _____ Date 9/05/06
Brian Dick
(Approved Signatory)

AUSTRALIAN SOIL AND CONCRETE TESTING P/L A.B.N. 49 050 539 930
Unit 7/17 Southern Cross Drive, Ballina 2478. Telephone: (02)66868 567, Fax:(02)66868 396

ASCT Doc. No. W40 Rev. No. 02 -9/3/00 BD

BOREHOLE LOG REPORT

Client : Hardings	Project No : 079 - 069	Project : Nightcap Village Mebbin
Lab No : 5980	Report No : 079 - 069 - 001	Borehole No: 1

Borehole Inclination :90°	Borehole Direction : Vertical	Date drilled : 4/5/06
Surface Elevation :N/A	Borehole location : Area 1	Drill type : Bobcat
Drilling Method : 300mm Auger		

TEST DATA

Soil Description	Depth (M)	Slope %	Graphic Symbol	Group Symbol	Consistency /Strength	Sample
GRAVELLY SILTY CLAY : brown yellow, medium plastic, medium dry strength, coarse to fine gravel poorly graded, firm, moist.				CL	F	
GRAVELLY SILTY CLAY : brown grey, medium plastic, medium dry strength, coarse to fine gravel, stiff, moist	0.6			CL	St	
SILTY CLAY / CLAY : grey orange brown, medium to high plastic, high dry strength, stiff to very stiff, moist	1.0			CL/CH	St/VSt	
CLAY : grey, high plastic, high dry strength, very stiff, moist to dry.	1.5			CH	VSt	
Stopped no change	1.8					

AUSTRALIAN SOIL AND CONCRETE TESTING P/L A.B.N. 49 050 539 930
Unit 7/17 Southern Cross Drive, Ballina 2478. Telephone: (02)66868 567, Fax:(02)66868 396

ASCT Doc. No. W40 Rev. No. 02 8/3/00 BD

BOREHOLE LOG REPORT

Client : Hardings	Project No : 079 - 069	Project : Nightcap Village Mebbin
Lab No : 5980	Report No : 079 - 069 - 001	Borehole No: 2

Borehole Inclination :90°	Borehole Direction : Vertical	Date drilled : 4/5/06
Surface Elevation :N/A	Borehole location : Area 2	Drill type : Bobcat
Drilling Method : 300mm Auger		

TEST DATA

Soil Description	Depth (M)	Slope %	Graphic Symbol	Group Symbol	Consistency /Strength	Sample
SILTY CLAY : red brown grey, medium to high plastic, medium to high dry strength, firm, moist.				CL/CH	F	
SILTY CLAY / CLAY : grey orange brown, medium to high plastic, high dry strength, stiff, moist.	1.2			CL/CH	St	
CLAY : grey, high plastic, high dry strength, very stiff, moist to dry.	1.5			CH	VSt	
Stopped no change	1.8					D

AUSTRALIAN SOIL AND CONCRETE TESTING P/L A.B.N. 49 050 539 930
Unit 7/17 Southern Cross Drive, Ballina 2478, Telephone: (02)66868 567, Fax:(02)66868 396

ASCT Doc. No. W40 Rev. No. 02 -8/5/06 BD

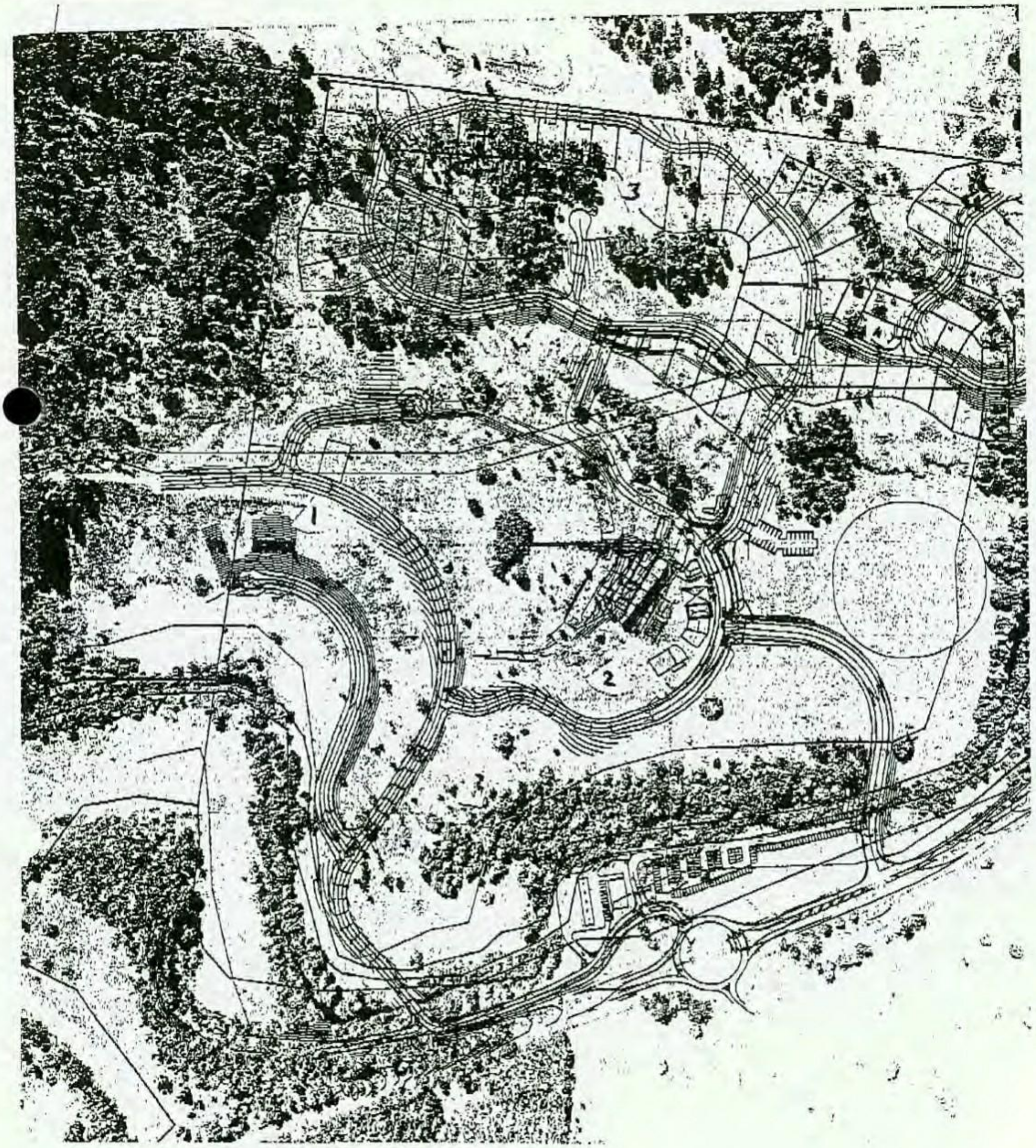
BOREHOLE LOG REPORT

Client : Hardings	Project No : 079 - 069	Project : Nightcap Village Mebbin
Lab No : 5980	Report No : 079 - 069 - 001	Borehole No: 3

Borehole Inclination :90°	Borehole Direction : Vertical	Date drilled : 4/5/06
Surface Elevation :N/A	Borehole location : Area 3	Drill type : Bobcat
Drilling Method : 300mm Auger		

TEST DATA

Soil Description	Depth (M)	Slope %	Graphic Symbol	Group Symbol	Consistency /Strength	Sample
CLAYEY SILT TOPSOIL : grey brown, low to medium plastic, low dry strength. soft to firm, moist.				ML	S/F	
SANDY CLAY : orange grey brown, medium plastic, medium dry strength, some medium to fine gravel, firm to stiff, moist.	0.3			CL	F/St	
GRAVELLY CLAYEY SAND / SANDY CLAYEY GRAVEL : yellow orange brown, low plastic, low dry strength, coarse to fine sandstone gravel, coarse to fine sand, medium dense to dense, moist to dry.	0.8			SC/GC	MD/D	
DISTINCTLY WEATHERED TO SLIGHTLY WEATHERED SANDSTONE	1.0			DW/SW	M	
Stopped no change	1.2					
	1.5					



PRELIMINARY

40 0 40 80 120 160 200m
140